

Wilder Lopes

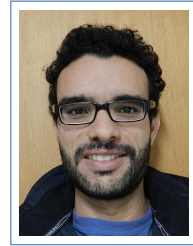
Chief Technology Officer

13 Allée Isadora Duncan, Paris
75015, France

+33 06 01 07 57 27

wilder.lopes@upstride.io

upstride.io



I am the co-founder and CTO of UpStride. In the past few years I have been a research scientist (machine learning and signal processing) with focus on the design of statistical-learning algorithms for computer vision and high-performance computing. In 2016 I earned a Ph.D. in Electronics Engineering (signal processing) from the University of Sao Paulo, Brazil, with a one year-long research period at the Technical University Munich (TU Munich), Germany. From 2016 to 2017 I was a Postdoc at Thales Research and Technology in Paris, France. My interests include machine learning, deep learning, signal processing, adaptive filtering, optimization, computer vision, applied mathematics, and high-performance computing.

Experience

- 2018–2020 **Co-founder and CTO.** *UpStride (upstride.io)*, Paris, France.
UpStride enables companies of any size to build, manage, and deploy artificial intelligence (AI) for computer vision with small or incomplete datasets. Our proprietary technology boosts the training performance of neural networks by increasing their accuracy in up to 10x and/or reduces their footprint by up to 3x, making it easier to deploy AI on embedded devices.
- 2017–2018 **Applied Research Scientist.** *UCit (www.ucit.fr)*, Paris, France.
Research and development of machine learning-based algorithms (classification, regression, and pattern recognition) for optimization of high-performance computing (HPC) systems. Data analysis of HPC clusters performance logs. Design of artificial neural networks for modeling HPC job schedulers. My algorithms lie at the core of UCit's products, e.g., Analyze-IT and Predict-IT.
- 2016–2017 **Postdoc Researcher.** *Thales Group (Research and Technology)*, Palaiseau, France.
Design of machine-learning algorithms for data partitioning in high performance computing platforms composed by heterogeneous devices, e.g., CPUs and GPUs. Supported by a Marie Curie Research Fellowship, European Union's Seventh Framework Programme (FP7-PEOPLE-2012-ITN, PITN-GA-2012-317446-INFIERI).
- 2014–2015 **Visiting Ph.D. Researcher.** *TU Munich*, Munich, Germany.
Year-long research stay. Design of adaptive-filtering algorithms for computer-vision applications, especially 3D registration of point clouds, using the Point Cloud Library (PCL).
- 2009–2010 **Analog and Mixed-Signal IC Engineer.** *LSITec*, Sao Paulo, SP - Brazil.
Design of analog and mixed-signal integrated circuits. Some circuits/blocks designed: Digital-to-Analog converters (DAC), Operational amplifiers, Frequency oscillators.
- 2007–2008 **Internship in Audio Engineering.** *Audium*, Salvador, BA - Brazil.
Design, simulation, and installation of electro-acoustics systems.
- 2007–2007 **Internship in Electronics Engineering.** *Squadra*, Salvador, BA - Brazil.
Design and fabrication of communication hardware (RS-232, RS-485, fiber optic). Microcontrollers programming (embedded C).

Education

Degrees

- 2012–2016 **Doctorate (Ph.D.) in Electronic Systems Engineering.** *University of Sao Paulo, Sao Paulo, SP - Brazil.*
Dissertation: Geometric-Algebra Adaptive Filters.
- 2010–2012 **M.S. in Electronic Systems Engineering.** *University of Sao Paulo, Sao Paulo, SP - Brazil.*
Thesis: Incremental Strategies in Combination of Adaptive Filters.
- 2003–2008 **B.S. in Electrical Engineering.** *Federal University of Bahia, Salvador, BA - Brazil.*
Final Work: Digital Audio Signal Processing Using Wavelet Transform (in Portuguese).

Complementary Courses

- 2012 **CLTP 3 - CanSat Leader Training Program.** *Tokyo Metropolitan University, Tokyo - Japan.*
[Five-weeks course on picosatellites.](#) Construction and test of a Can Satellite (CanSat) with fully functional circuitry.
- 2008–2009 **Analog and Mixed-Signal IC Design (IC Brazil).** *CTI Renato Archer, Campinas, SP - Brazil.*
Specialization course (6 months) on design of analog and mixed-signal integrated circuits. Training on Cadence Design Systems tools.

Computer skills

- Programming **Python, C/C++, Matlab, Java, Cuda, HTML, CSS.**
- ML Tools **scikit-learn, PyTorch, Keras, TensorFlow.**
- Hardware **Raspberry Pi, BeagleBone Black, Texas Instruments MSP430.**
- Editors **Atom, Vim, Qt Creator.**
- O.S. **Linux, Windows.**
- Other **L^AT_EX, Git, Docker, RESTful API, CMake, Point Cloud Library, MS Office, Cadence.**

Languages

- | | | | |
|------------|---------------------|---------|---------------|
| Portuguese | Native | French | Fluent |
| English | Fluent | Spanish | Basic |
| German | Intermediate | | |

Publications

- Lopes, Wilder B.;** Lopes, Cassio G. "[Geometric-Algebra Adaptive Filters](#)". IEEE Transactions on Signal Processing, 2019.
- Lopes, Wilder B.;** Al-Nuaimi, Anas; Lopes, Cassio G. "[Geometric-Algebra LMS Adaptive Filter and its Application to Rotation Estimation](#)" IEEE Signal Processing Letters, 2016.
- Al-Nuaimi, Anas; **Lopes, Wilder B.;** Steinbach, Eckehard; Lopes, Cassio G. "[6DOF Point Cloud Alignment using Geometric Algebra-based Adaptive Filtering](#)" IEEE WACV 2016 - Lake Placid, NY, USA.
- Al-Nuaimi, Anas; **Lopes, Wilder B.;** Zeller, Paul; Garcea, Adrian; Lopes, Cassio G.; Steinbach, Eckehard "[Analyzing LiDAR Scan Skewing and its Impact on Scan Matching](#)" IEEE IPIN 2016 - Madrid, Spain.
- Lopes, Wilder B.;** Lopes, Cassio G. "[Incremental Combination of RLS and LMS Adaptive Filters in Nonstationary Scenarios](#)" IEEE ICASSP 2013 - Vancouver, Canada.

Chamon, Luiz F. O.; **Lopes, Wilder B.**; Lopes, Cassio G. "*Combination of Adaptive Filters with Coefficients Feedback*" IEEE ICASSP 2012 - Kyoto, Japan.

Lopes, Wilder B.; Lopes, Cassio G. "*Incremental-Cooperative Strategies in Combination of Adaptive Filters*" IEEE ICASSP 2011 - Prague, Czech Republic.

Open-Source Project

OpenGA.org - Open-source Geometric Algebra (OpenGA) is a hub for tools and algorithms devised in light of Geometric (Clifford) Algebra (GA). GA generalizes many of the standard algebraic systems used for describing geometric transformations, e.g., linear/matrix algebra, complex algebra, quaternions etc. GA-based algorithms are good candidates for applications where multidimensional quantities need to be estimated.